



Fit for kids

Children's feet grow very quickly and frequently in spurts, so their shoes need to be checked at regular intervals to see if they still fit properly. Any new ones bought to replace them must naturally have sufficient room to allow for future growth. Failure to do this would soon lead to discomfort and eventually severe problems such as hammer toes. It has to be remembered that the bones of children's feet are relatively soft and only harden gradually, so they can be easily distorted by badly fitting footwear right up to the age of eighteen. Even tightly fitting socks can cause permanent damage to the feet of very small children.

Children's shoes consequently need to be designed specifically for them to ensure that they cater for the changing physical requirements of young feet as they grow. At the same time, they must also meet four other essential criteria, namely, quick and easy entry of the foot, simple and efficient adjustment of the shoe, firm support of the foot and

quick and easy exit from the shoe. It is therefore also essential for children's footwear to have some form of built-in

adjustment or 'fitting feature' and the most popular of these are lacing, straps or bars, elastic panels and zip fasteners.

Figure 1: too close

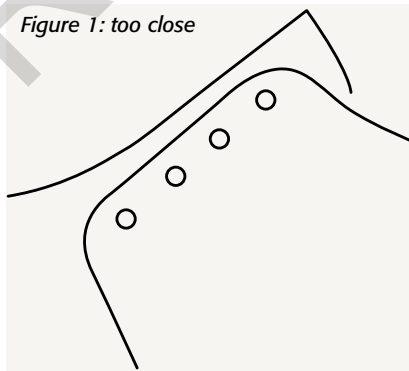


Figure 2: good spacing

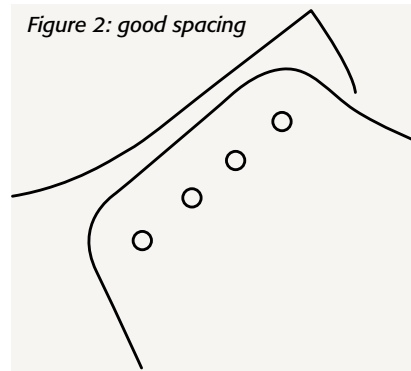


Figure 3: too high

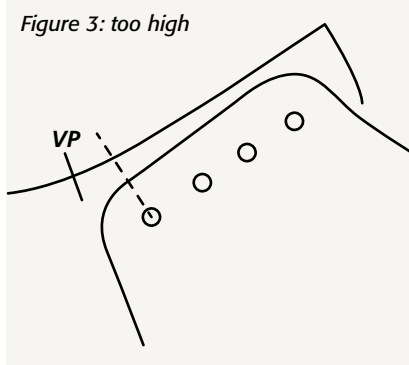
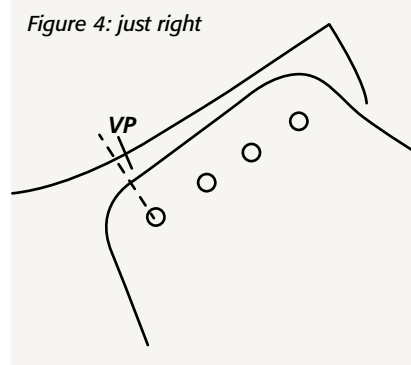


Figure 4: just right



LACING

Lacing is the traditional method of shoe closure and one that is still extensively used, particularly in the designs of the sports shoe type. The width of the lace and the size of the eyelet or lace hole must be compatible, both for appearance and ease of adjustment. There should also always be a minimum safety margin of 6-7mm between the outer edge of the eyelet and the edge of the facing (Figures 1 and 2) so that the eyelet cannot be torn out by a strong pull on the laces. Foot entry and exit can sometimes be difficult if the bottom eyelet is not positioned low enough. In adult footwear, the bottom lacing can be positioned across the vamp point (VP) and still provide adequate entry and adjustment. In a child's shoe, it must be lower to ensure easy entry and exit, and to allow for foot growth (Figures 3 and 4).

Younger children often find laces difficult to cope with as they have a problem coordinating their small fingers in order to tie knots. However, properly tied with the help of an adult, foot support is extremely good. Lacing through loops, D-rings or ski hooks is an alternative solution where foot entry and adjustment is easier than with eyelets as the lace is able to move through the loops or hooks with less restriction. Foot support is again good and, although younger children may again need some assistance, they are generally easier to use than eyelets or lace holes. This type of fastening can also be made into a strong and effective design feature.

STRAPS AND BARS

These have always been popular and can be secured and adjusted in various ways. As well as the traditional buckle, 'quick release' fasteners have become increasingly popular due to their ease of use and design potential. Whatever means is used to achieve easy entry, exit and adjustment of the strap or bar, it is necessary to accurately 'engineer'



Loops make adjustment easier than with eyelets.

the design. The component must always be in the best place to fulfil its function. All too often, the buckle position is merely guessed at and, as a consequence, problems are caused in both fit and wear. It must also be remembered that even simple buckles can vary considerably in size and shape, so each one will have its own ideal position on the upper.

Straps and bars are at their most efficient when they cross the centre line of the instep, ankle or heel at 90 degrees. The shortest distance between two points is always a straight line, so having a curve in a strap effectively increases its length and reduces its ability to fit both last and foot. In lasting and in wear, a curve will always try to straighten out,

leading to a slackening of the strap and a reduction in shoe fit. (Figures 5 and 6). Sometimes, a slight curve cannot be avoided. In this case, it should start as far as possible from the centre line of the strap, be very gradual and preferably spread over the maximum possible strap length.

Buttons and studs are other possible means of fastening straps and bars. They are often used in conjunction with elastic to provide the degree of adjustment that these fastenings lack but this in turn reduces the extent to which the strap can grip the foot. Elastic can also be used as a keeper for buckles but with the same reservation. In this instance, it is best to use one of the special 'ladder' elastics produced specifically for this application.

Touch and close, or hook and loop, is another option and is excellent for ease of adjustment and fit, with very few disadvantages. Originally reserved for sports and leisure styles, it is now frequently used in conjunction with narrow and delicate straps. It is most effective when taken through a loop and pulled back on itself, so that it is less likely to pull away in wear. As it is not visually attractive, it should be concealed, so extra length must be built into the top strap to allow for it riding over the lower one and around the loop or ring (Figure 7).

Strap and bar style uppers may be lasted with the straps already buckled, but this can lead to difficulty in last removal if there is extreme tension. Damage may also be caused by

Figure 5: angle of stress on a curved strap

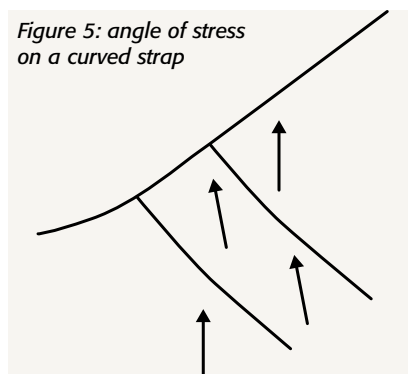


Figure 6: angle of stress on a straight strap

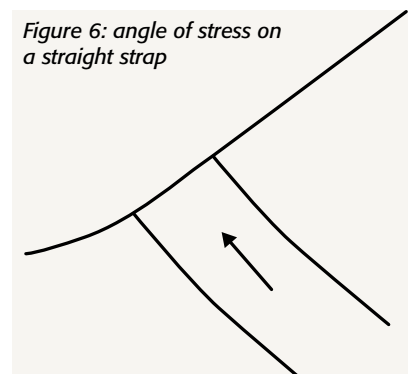


Figure 7: top of strap overlays bottom of strap

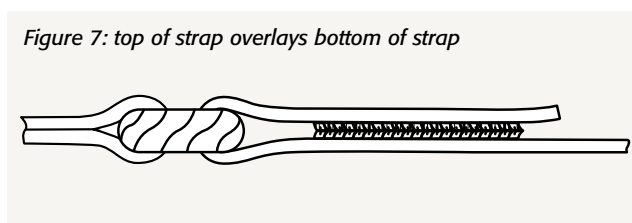
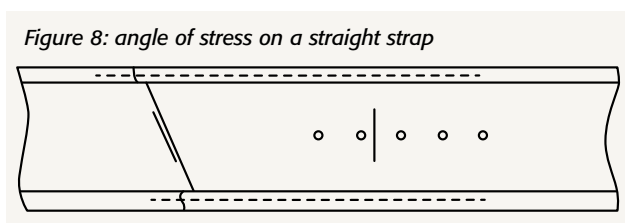


Figure 8: angle of stress on a straight strap





Quick release fastenings are generally easy for children to use.

Figure 9: too low

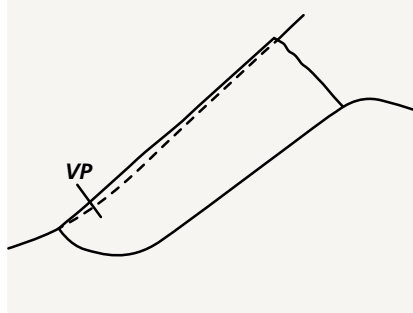


Figure 10: just right

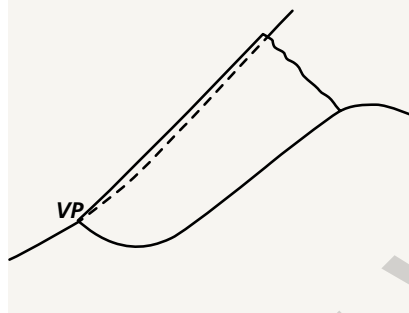


Figure 11: instep zip will hinge back

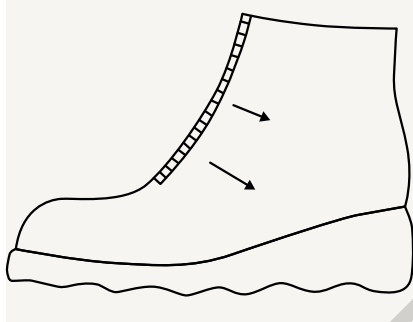
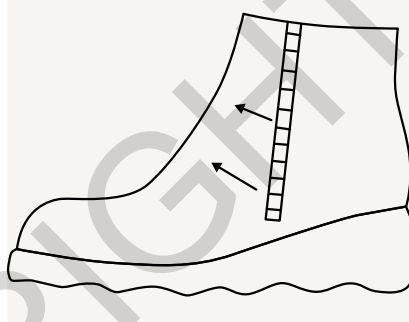


Figure 12: side zip will hinge forward



pressure of the buckle during shoemaking operations. An alternative is to stitch the two strap sections together along their lining margins. They can then be separated before slipping by trimming the surplus lining material. The buckle can then be attached in its correct pre-determined position (Figure 8).

ELASTIC PANELS

Elastic is another option for children's footwear. It allows easy entry and exit and, when of the correct quality, holds the foot firmly in wear. It may be concealed by covering with a saddle or tab, or left visible as a design feature. The most efficient position for an elastic panel is at the instep, where

it should be allowed to stretch unrestricted (most elastics expand up to three times their own length). It must also be positioned to provide stretch where it is most needed. The bottom edge should ideally lie just below the vamp point, as this allows for the rapid growth of small feet and the inability of the wearer to put on their own footwear. There is no advantage in setting the elastic below this line and good fit could in fact be impaired (Figures 9 and 10).

Elastic panels can of course be placed in other positions, but the further they are moved back from the instep, the less effective they become. Side panels or gussets are used solely for foot entry and exit and, unlike an instep panel, contribute little to comfort and fit. This factor should be carefully considered and if pursued, care must be taken to ensure the elastic is of suitable strength and thickness as the repeated stress of entry and exit of the foot exerts considerable strain on it.

ZIP FASTENERS

These provide easy foot entry and exit but no adjustment. They are again most efficient when placed in the central instep position, with the base just below the vamp point. Boots of all heights may have side zips and, in this case, the base of the zip needs to go almost down to the sole edge. The further it is from the instep, the lower its base must be so that the upper can hinge forward at the vamp point for easy entry and exit (Figures 11 & 12).

These four systems are the main types of adjustment for children's footwear and all of them will perform well provided the points mentioned are recognised and followed. There are many other types of fastenings taken from adult ranges which can be used but they are frequently more fashionable than functional and so may not fulfil the four essential requirements for children's shoes. Today's children are more than ever extremely fashion conscious and want to emulate adults as much as possible. Nevertheless, at the same time, their feet must be protected by footwear that will not cause discomfort or harm. It is therefore up to all manufacturers to ensure their products are in every way, 'fit for kids'. 🔄



Hook-and-loop is ideal for children's shoes due to its ease of use.